# ON THE TAXONOMIC POSITION OF *MYSTUS CAVASIUS* (HAMILTON-BUCHANAM, 1822) VIS-A-VIS *M. NIGRICEPS* (VALENCIENNES, 1839) AND *M. KELETIUS* (VALENCIENNES, 1839).

by

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**ABSTRACT.** – The taxonomic position of three nominal species of Bagridae family belonging to the genus *Mystus* : *M. cavasius, M. nigriceps* and *M. keletius* is discussed, after examining the type-specimens of these three species and fresh material. *M. nigriceps* is considered as a junior synonym of *M. cavasius* ; *M. keletius* is a valid species.

**RÉSUMÉ.** – La position taxinomique de trois espèces de la famille des Bagridae appartenant au genre *Mystus* : *M. cavasius, M. nigriceps* et *M. keletius* est discutée après avoir examiné les spécimens types de ces trois espèces ainsi que du matériel récent. *M. nigriceps* doit être considéré comme un synonyme junior de *M. cavasius* ; *M. keletius* est une espèce valide.

There is no unanimity among recent workers (Smith, 1945 : Munro, 1955 ; Jayaram, 1954) with regard to the validity of the nominal species *Mystus cavasius* (Hamilton-Buchanan, 1822), *M. nigriceps* (Valenciennes, 1839), and *M. keletius* (Valenciennes, 1839), of freshwater catfishes of family Bagridae.

Günther (1864:77) remarked that *Macrones* [ = *Mystus* ] *nigriceps* is closely allied to *Macrones* [ = *Mystus* ] *cavasius.* Smith (1945:390) commented that « the union of *Mystus nigriceps* with *M. cavasius* seems proper and desirable » ; he observed almost perfect agreement between specimens (in the U.S. National Museum) of *M. cavasius* from Burma and of *M. nigriceps* from peninsular Siam. Norman (*in litt.* ; Smith, *op. cit.* :391) also was unable to detect any difference of importance between specimens of the two species in the British Museum and opined that they are identical. However, Jayaram (1954:553), apparently on the basis of examination of specimens in the collection of the Zoological Survey of India, remarked that *M. nigriceps* is very closely allied to *M. cavasius* but distinct enough to warrant specific rank ; he did not assign any reason for treating them as distinct species. Jayaram (1959:55) incorrectly cited the type-locality of *Bagrus* [ = *Mystus* ] *nigriceps* Val., 1839, as Pondicherry ; its type-locality is in fact Java as was stated by Valenciennes

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(1839, *14*:412). This has been confirmed by Dr. Boeseman of the Rijksmuseum van Natuurlijke Historie (RMNH), Leiden, where the holotype is deposited.

One of us (M. Desoutter) re-examined the holotype of *Bagrus* [ = *Mystus* ] *nigriceps* Valenciennes, 1839 (RMNH 2953) in the Rijksmuseum van Natuurlijke Historie, Leiden ; its comparison with the figure and description of *Pimelodus* [ = *Mystus* ] *cavasius* Ham. Buch., 1822 [ in absence of the types of Hamilton-Buchanan's species (Hora, 1929) ] reveals no significant differences between them. There seems to be an error in the figure of *Pimelodus cavasius* of Hamilton-Buchanan (Pl. XI, Fig. 67) : the occipital process is shown as reaching the base of dorsal fin. We have examined a series of skeletons and alizarine-stained specimens of *M. cavasius* of different lengths. In all of them the occipital process reaches the anterior tip of the basal bone of the dorsal fin, but not the dorsal fin as shown in Hamilton-Buchnan's figure. Dr. Boeseman (*in litt.*) informs us that « in the holotype of *M. nigriceps* the tip of the occipital process reaches the anterior tip of the predorsal bone, with which it appears to articulate... they are not coalescend ». The holotype of *M. nigriceps* agrees with *M. cavasius* in all salient characters :

1. the long median fontanelle reaches base of occipital process
2. the occipital process reaches basal bone of dorsal fin
3. maxillary barbels reach caudal fin (in *M. cavasius*, they extend to between anal and caudal fin)
4. adipose fin is long and contiguous with rayed dorsal.

Two specimens labelled *M. nigriceps* in the collection of the Zoological Survey of India (ZSI), Calcutta (1: No.F. 122/2, locality-Perak, F.M.S., received from Raffles Museum ; 2: No.F. 10322/1, locality-Assam, collector: Dr. N. Annandale) were re-examined. They agree in all salient features with specimens of *M. cavasius*. The body proportions of the holotype of *M. nigriceps* also correspond to those of *M. cavasius* (Table I). Hence we consider *Mystus nigriceps* (Val., 1839) as a junior synonym of *Mystus cavasius* (Ham.-Buch., 1822).

Munro (1955: 55) incorrectly placed *M. cavasius* in the synonymy of *M. keletius* (Val., 1839). In the text (p. 55) he states that « the maxillary barbels reach anal or caudal » (which they do in the former species), but his figure (Pl.X, Fig. 5) clearly shows that the maxillary barbels extend only to the tip of ventrals (as in *M. keletius*). In *Mystus cavasius* the adipose fin is longer and contiguous with the rayed dorsal, the maxillary barbels extend to posterior end of the anal fin or reach the caudal base and the median fontanelle reaches the base of the occipital process.

The two syntypes of *Bagrus* [ = *Mystus* ] *keletius* Val., 1839 (MNHN 4369 and A. 9011) in the Muséum d'Histoire Naturelle, Paris were re-examined by one of us (M. Desoutter) ; this species has a shorter adipose fin which is not contiguous with the rayed dorsal ; its maxillary barbels extend only to the ventrals and the median fontanelle does not reach the base of occipital process. In view of these

## TABLE I

Body proportions (expressed as percentages) of *Mystus nigriceps*(Val.) and *Mystus cavasius* (Ham. Buch.)

| | | | as percentage of standard length | | | | | as percentages of head length | |
|---|---|---|---|---|---|---|---|---|---|
| | Total length mm | Standard length mm | Head length | Body length | Pre-anal distance | base of rayed dorsal | base of adipose dorsal | Eyes diameter | Snout length |
| I. *M. nigriceps* | | | | | | | | | |
| 1. Holotype :<br>Leiden Museum,<br>RMNH 2953<br>Loc. : Java | 103 | 71 | 25.35 | 19.71 | 77.46 | 15.49 | 51.40 | 27.77 | 38.88 |
| 2. ZSI - F.10322/1<br>Loc. : Assam | | 129 | 24.03 | 24.75 | 70.54 | 15.47 | 46.51 | 27.41 | 41.93 |
| 3. ZSI - F.122/2<br>Loc. : Perak, F.M.S. | | 204 | 22.05 | 22.09 | 68.62 | 15.44 | 46.32 | 26.66 | 41,53 |
| II. *M. cavasius* | | | | | | | | | |
| 1. ZSI - 784<br>Loc. : Calcutta | | 125 | 22.80 | 20.00 | 68.80 | 14.00 | 39.60 | 26.31 | 31.57 |
| 2. ZSI - 425<br>Loc. : Bassein | | 134 | 24.62 | 22.76 | 72.76 | 14.17 | 43.65 | 25.75 | 30.30 |
| 3. ZSI - 293<br>Loc. : Burma | | 148 | 26.01 | | 69.59 | 14.18 | 45.60 | 27.27 | 35.06 |
| 4. Fresh material<br>Loc. : Calcutta<br>(N=7) | 116-<br>136 | 84-<br>96 | 23.95-<br>26.43 | 19.54-<br>22.91 | 65.97-<br>75.82 | 13.91-<br>15.47 | 41.37-<br>49.79 | 26.08-<br>28.26 | 35.41-<br>39.13 |
| 5. Fresh material<br>Loc. : Guntur | 90-<br>215 | 60-<br>161 | 22.15-<br>26.08 | 18.93<br>23.72 | 68.33-<br>73.36 | 13.16-<br>15.80 | 37.08-<br>50.12 | 24.48-<br>27.27 | 34.53-<br>43.85 |

distinct differences, *Mystus cavasius* cannot be considered as a synonym of *M. keletius.*

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